

## **BIOGRAPHICAL INFORMATION**

Theresa E. Trainor  
Atlas Change Management Team Lead  
Baltimore Gas and Electric Company

### Specific Responsibilities

Ms. Trainor joined BGE in 1994. She joined the Atlas Project in 2002 to lead the Change Management Team, over three years into a planned five-year project. Her responsibilities include:

- \* Development of a change management strategy;
- \* Development and enhancing business processes using new technologies;
- \* Development and delivery of training for each phase of the project;
- \* Ongoing project communications to all levels of the organization; and
- \* Development and ongoing support of a Change Network.

### Past Experience

Prior to joining the Atlas Project, Ms Trainor was responsible for the Gas and Electric Mapping Organization. This group is one of the main client groups of the Atlas Project. Her role was to prepare the organization for the technology and process changes that the Atlas Project would bring to bear. She worked very closely with the Atlas Project team to plan for new business processes, increased workload during the conversion process and prepare the employees for the new technology.

### Educational Information

M.S. - Applied Behavior Science (Organization Development), Johns Hopkins University, MD  
B.S. - Business Administration (Computer Information Systems), University of Baltimore, MD  
A.A. - Data Processing, Catonsville Community College, MD  
Certificate - Quality Management, Loyola College, MD

### Professional Memberships

GITA

## **BIOGRAPHICAL INFORMATION**

Matthew D. Souder  
Change Management Analyst, Atlas Project  
Baltimore Gas and Electric Company

### Specific Responsibilities

Mr. Souder joined BGE's Atlas Project in May 2001. As a Change Management Analyst, Mr. Souder has worked on implementing GIS and distribution design software with multiple clients. He meets with client organizations to understand current business processes and determines how these processes will be executed using Atlas Software. He has developed training plans and training materials based on identified needs and process gaps, and has conducted classroom training tailored to specific job duties for GIS and distribution design software. Additionally, Mr. Souder has maintained the project Intranet site and assisted with project communications.

### Past Experience

Prior to joining BGE's Atlas Project, Mr. Souder worked for the following:

*Eberline Analytical Services.* As GIS Manager in the Oak Ridge TN office, Mr. Souder coordinated radiological characterization surveys for Department of Energy, Department of Defense, and private industrial clients.

*Tennessee Valley Authority.* As GIS Specialist for the Engineering and Resources group, Mr. Souder worked with a team to convert and automate TVA's land management information system.

*Department of Geography, The University of Tennessee.* Mr. Souder taught introductory level courses in Geographic Information Systems and Physical Geography.

### Educational Information

M.A. – Geography, Resource Issues Specialization, George Washington University  
B.A. – History and International Affairs majors, Florida State University  
Additional graduate coursework, GIS and Biogeography specializations, University of Tennessee

### Professional Memberships

GITA

# MAXIMIZING THE USER TO SUCCESSFULLY IMPLEMENT GIS TECHNOLOGIES

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## ABSTRACT

Technology is often thrust upon a user community with very little understanding of how the technology will affect them from many different angles. While Change Management efforts have focused much needed attention on these softer issues, they often fall short in addressing key user issues to ensure a smooth implementation. Learn from a key stakeholder, who moved to the GIS project to lead the Change Management efforts, why it is so critical to build and sustain strong relationships with your users throughout the entire project lifecycle. Key areas covered are partnering with users and jointly assessing risks with users and determining how to best mitigate those risks. You will learn how proven change management strategies, such as Change Networks, Expectation Management, Business and Organizational Impact Analysis, Change Readiness Approach, Communication Channels, and Training and Performance Support build user momentum and acceptance. Finally, you will explore the lessons learned by both the project team and users.

## BACKGROUND

Baltimore Gas and Electric Company (BGE) began its efforts with GIS technologies in 1999 with the approval of the Atlas Project. Atlas interfaces with over ten systems, including the customer information system, work management system, and outage management system. It also integrates with an on-line job design for gas and electric facilities. Though aggressive with all that it encompasses, Atlas is designed to deliver a fully integrated GIS design and an enterprise-wide asset management solution for gas and electric facilities. This alone creates many change management challenges. The power of having committed and engaged clients is critical to the success of Atlas and how to best go about creating and sustaining that is the focus of this paper.

## BUILDING AND SUSTAINING STRONG RELATIONSHIPS

Building and sustaining strong client relationships should be a priority throughout the project life cycle. However, past experience shows that relationships between technology projects and end users have often been tenuous at best since resource stressors on development and technical teams compel them to focus on developing requirements and building systems. Enter Change Management, now typically charged with focusing much-needed attention on fostering and preserving these relationships. To do this, Change Management must take the necessary steps to build trust, listen to clients, meet commitments, and stay engaged while continuously bridging the gaps between technology speak and client speak. Techniques used at BGE to achieve this include partnering with clients and openly assessing project risks.

### Partnering with your Client

It is very important to develop a partnering relationship with your clients. Not only do *they* need to be engaged from the onset, but also the Change Management team, and the project team by extension, must be engaged to ensure success. Change Management is often caught between the two-headed monster of project implementation and client desires, so the key is to develop three-way trust between the client, Change Management, and the rest of the Project team.

A primary goal of Change Management is to build this trust on the client-side by representing the client, while communicating realities and managing expectations of project deliverables. Clients must know that you are their voice on the project team, but they must also understand that Change Management is a messenger and agent of change designed to help them cope with the changes that are about to occur in their organizations. These often-conflicting roles of Change Management can only be successful if strong partnerships are developed through trust, communication, and active participation.

One of the stumbling blocks in establishing partnerships when implementing GIS technologies is that charts, process flows, and even demos of applications showing vendor data remain abstract concepts that won't mean anything until users see it with their data at their desk, during their normal working hours. The realities of project life often preclude this from happening until at, or shortly before, rollout time when users are supposed to start using the system.

The difficulties in giving clients a look and feel of the technology they can grasp makes it also difficult for clients to gauge whether the Project team is truly grasping the specific work processes and job flows they live with daily. This is where maintaining solid working relationships is critical. Users need to feel confident that the project team understands their business, and if they don't, they need to feel confident that Change Management is with them for the long haul and will do whatever it takes to gain the needed understanding.

That is where trust plays a key role working with the clients. They need help with how to plan for the technology. How will this impact their productivity? Will they be able to realize the benefits originally thought? Does the project team really know their business? All of these questions CAN be answered in time. However, the answers often come by working together with the client throughout the life cycle of the project and NOT when it comes time for training. This is discussed in more detail in the Change Management Strategies section.

### Assessing Risks

Part of the relationship building with clients also includes discussions on how to address issues and/or problems as they arise. It is crucial to meet with your clients as early as possible to determine how risks will be identified and how they will be resolved. While your project team may very well be staffed with personnel familiar with the client organizations, there is still nothing more beneficial than working closely with the client organization itself. If risks are not identified and addressed, successful implementation will be adversely impacted.

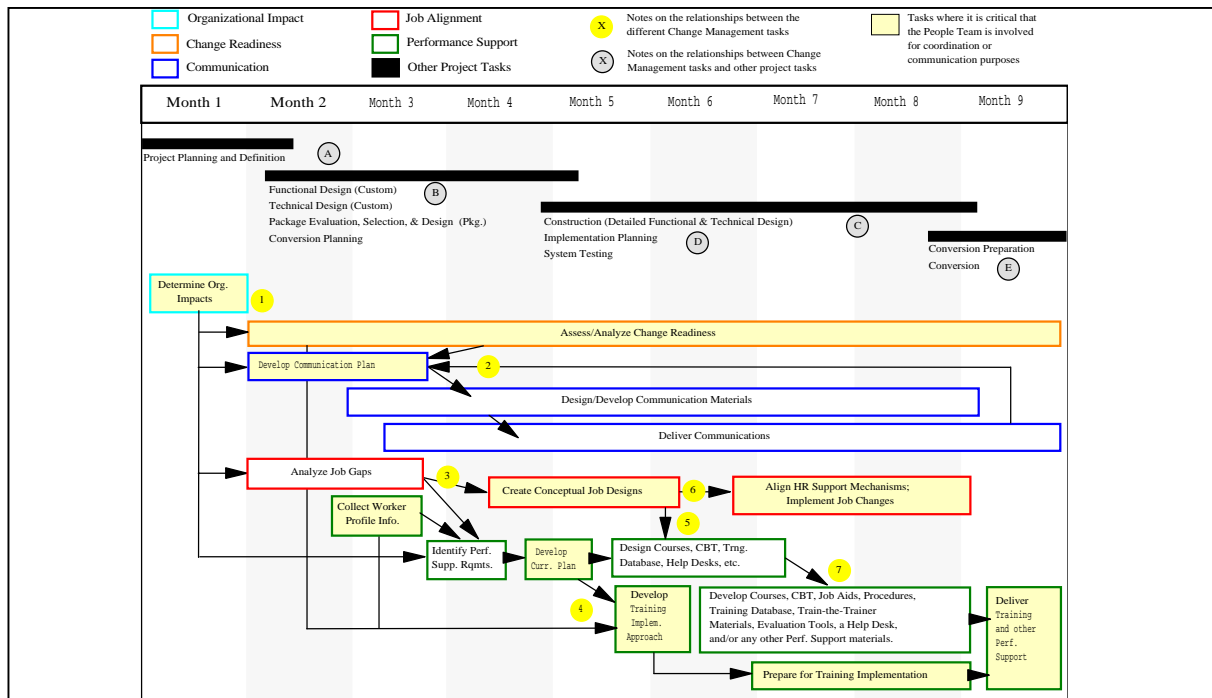
Some of the key risks identified within the Atlas project include keeping up with the demands of running a business during implementation, and the associated learning curves – understanding what the impacts to productivity may be. Other risks include the demands on clients for their time for meetings and the use of Subject Matter Experts (SME's), and evolving project scope and application functionality. It also includes keeping the clients engaged and staying in the loop with ongoing changes to client organizations and understanding potential impacts to the project.

## CHANGE MANAGEMENT STRATEGIES

The Atlas project, partnering with Accenture, introduced a revitalized change management strategy about three years into the project. The components of the strategy are integrated together to deliver a solid strategy where opportunities to adjust are always available. Key to the success of these strategies is the development of the strong client relationships noted above.

The Change Management Strategy that BGE uses is based on the premise that Change Management activities are integrated into the project life cycle, not just when training is needed. Diagram 1 depicts the timeline of the activities and the relationship they have with other project tasks as well as other change management tasks. The fundamental premise is that change management activities stretch the entire project life cycle and that success is not measured at the time of implementation, but rather with the successful adoption of the new technology during business practices.

Diagram 1. Proprietary and confidential to BGE and Accenture.



### Relationships Between Change Management Tasks and Other Project Tasks

- A. If a project's definition and/or scope changes, the organizational impacts will most likely change (and thus the change management interventions based upon those organizational impacts).
- B. Functional design decisions (i.e. revised business processes, new workflows, etc.) conceptually define required job changes and who needs what kind of performance support.
- C. Detailed design decisions provide the basis for both communication and performance support content.
- D. Project implementation planning should incorporate and support job alignment, communication, and training activities (this is essential).
- E. Before systems training can be piloted and delivered, the system must be successfully tested and stable. The converted system must look and act like the system simulated in the front-end training.

### Relationships Between Different Change Management Tasks

- 1. Organizational impact conclusions serve as the bases for all other Change Management tasks. Share these with the People Team for communication purposes.
- 2. Communication and change readiness activities are interrelated and iterative. They occur continuously.
- 3. Job gap information should be forwarded to the People Team, where it is stored in a database for coordination and communication purposes.
- 4. The People Team will consolidate Curriculum Plans and coordinate the corresponding Implementation Plans, Training Preparation, and Training Delivery activities.
- 5. Job design information serves as important input to job-based performance support.
- 6. The People Team will communicate job design and alignment information to HR. HR will then align HR support mechanisms and implement the job changes.
- 7. The time it takes to design and develop performance support depends on the type of performance support, the amount, and the number of dedicated resources.

## Change Networks

One of the main components of the Change Management Strategy is the creation of a Change Network. The Change Network is a group of individuals, usually leadership, that have responsibility for supporting and implementing the change throughout the organization and will work to build ownership of new processes, systems, and behaviors that will be implemented. These individuals are called Change Agents.

The Change Network provides many valuable benefits for the projects' success. It helps to create ownership of and involvement in the change throughout the entire organization. It enables awareness and understanding of the change effort through communication. It plays a major roll in reducing change resistance by encouraging personnel to understand the need for change and its potential advantages. And finally, it provides a feedback mechanism back to the project team.

Mid-level leadership identifies Change Agents for each of the impacted organizations based on certain criteria. Each application rollout has a group of Change Agents that work very closely with the Change Management Team. They address process issues, subject matter expert needs, communication needs, training and support strategies, and provide overall feedback on status.

A key indicator for success for the Atlas project is the level of engagement of the Change Agents. The more engaged the Change Agent, the better prepared the client organization is for the application rollout. It also allows both the client and the project to deal with potential barriers if they arise. Change Agents also interact frequently with the system development team to focus on building functional requirements and testing requirements.

## Expectation Management

Expectations are managed by using a five-stage process centered on identifying and meeting stakeholder expectations. The stakeholders are the ones that determine, set and document expectations for the project. Expectation management helps to manage the cost of quality. The Change Management Team is responsible for managing and measuring to those expectations. The project team gauges its success by adjusting the work processes as needed to continuously improve throughout the project life cycle. The five stages for managing expectations are outlined in Table 1.

Table 1. Proprietary and confidential to BGE and Accenture.

<b>Stage</b>	<b>What</b>	<b>How</b>	<b>Who</b>
<b>Expectations</b>	<ul style="list-style-type: none"> <li>◆ Identify Stakeholders' expectations that will drive the project's accomplishments/ stakeholder satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>◆ Determine the right expectation gathering techniques for the client environment</li> <li>◆ Facilitate the gathering session</li> <li>◆ Document stated and unstated expectations</li> <li>◆ Confirm top priority expectations</li> <li>◆ Communicate approved expectations</li> </ul>	<ul style="list-style-type: none"> <li>◆ Stakeholders – anyone who will receive or be affected by the work</li> <li>◆ Change Management Lead and Project Management will gather expectations and manage the process</li> </ul>
<b>Planning</b>	<ul style="list-style-type: none"> <li>◆ Define a plan to achieve expectations and ensure quality in all processes</li> <li>◆ Revise the plan and communicate to the team based on</li> </ul>	<ul style="list-style-type: none"> <li>◆ Develop a matrix that documents expectations and goals; assigns owners and priorities; and defines measures of success</li> <li>◆ Create schedule for reporting progress against goals</li> </ul>	<ul style="list-style-type: none"> <li>◆ Change Management defines Expectations Plan and measurement process</li> <li>◆ Project Management contributes to and approves plan</li> </ul>

Stage	What	How	Who
	tailoring the outcome	<ul style="list-style-type: none"> <li>◆ Define a process for discussing performance and implementing action plans as needed</li> </ul>	<ul style="list-style-type: none"> <li>◆ Key Stakeholders review and approve plan</li> </ul>
<b>Execution</b>	<ul style="list-style-type: none"> <li>◆ Execute work processes defined by expectations while gathering measurement information to analyze performance</li> </ul>	<ul style="list-style-type: none"> <li>◆ Review expectations, measures and goals for each process</li> <li>◆ Execute each process as defined</li> <li>◆ Collect and document measurement information while executing the work</li> </ul>	<ul style="list-style-type: none"> <li>◆ Project team members execute the work</li> <li>◆ Change Management Lead collects the measurement data</li> </ul>
<b>Checking</b>	<ul style="list-style-type: none"> <li>◆ Analyze quality performance and determine improvement recommendations</li> <li>◆ Analyze measurement data against the performance goals</li> <li>◆ Ask, “Can we do better?”</li> </ul>	<ul style="list-style-type: none"> <li>◆ Conduct a gap analysis of the measurement data</li> <li>◆ Consider alternatives to address gaps</li> </ul>	<ul style="list-style-type: none"> <li>◆ Change Management Lead performs gap analysis with support of Project Management</li> </ul>
<b>Tailoring</b>	<ul style="list-style-type: none"> <li>◆ Continuously improve quality performance</li> <li>◆ Document improvement plan and communicate it to the team</li> </ul>	<ul style="list-style-type: none"> <li>◆ Create an action plan to address gaps and assign responsibilities</li> <li>◆ Alter existing expectation matrix to reflect action plan</li> <li>◆ Pilot the recommendations and verify the results</li> </ul>	<ul style="list-style-type: none"> <li>◆ Change Management Lead and Project Management creates action plan</li> <li>◆ Key Stakeholders approve action plan</li> </ul>

The Stakeholder Expectations for the Atlas Project include:

- Project stays at or below budget projections;
- System is delivered on time;
- System delivers all required business capabilities;
- Converted data meets quality standards;
- Business Units realize operational efficiencies/ savings with system use;
- System is user-friendly/ easy to use;
- Each rollout comes across as a finished product on Day 1;
- System is stable and available for business use;
- System performance is adequate for business needs;
- System issues are resolved in a timely fashion and communicated to impacted businesses;
- Organization / employees have buy-in/ownership of the new system;
- Employees are prepared to use system upon rollout; and
- Impacted business owners and users are effectively communicated to.

#### Business and Organizational Impact Analysis

A thorough analysis is performed for each organization that could be potentially impacted by the new technology. The business analysis includes people, systems, and processes. An example of this is assessing the current clients of the legacy map records. The new technology will change the entire mapping process, reducing cycle time for record updates. Any client that depends on the maps need to be analyzed to assess how they will be impacted by the new technology. This analysis will feed the training

and support plans for each impacted client.

The organizational impact analysis addresses targeted organizations that may need to be changed or reorganized to make most efficient use of the technology. This is performed in only a few key areas and is often led by the client with input and guidance from the project team.

In both of these analyses, the quality of the results is heavily dependent on the amount of time invested by the client organization and the willingness of the project team to include the client. The biggest successes come from situations where both sides are engaged.

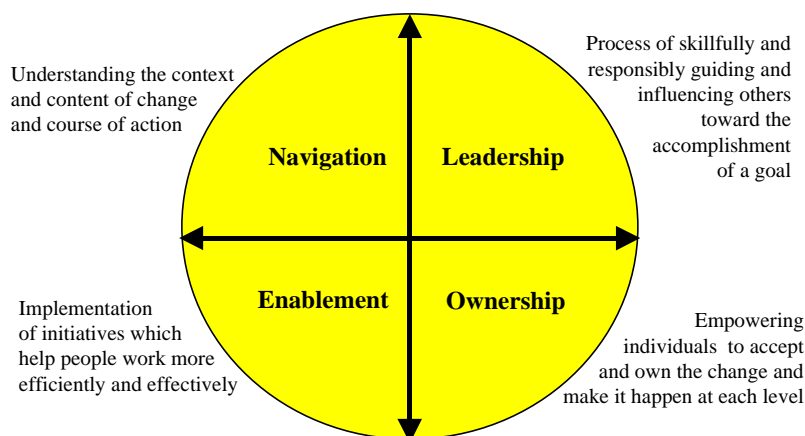
### Change Readiness Assessment

The Change Readiness Assessment tool provides a feedback mechanism to review the current state of client readiness to implement the new GIS technologies. The four stated objectives are:

- Measuring the understanding of the need for change
- Monitor the effectiveness of the change management activities completed to date
- Identify any potential barriers or issues related to the change
- Proactively manage business risk

The main tool used is a Change Readiness Survey sent to all impacted clients at two milestone dates (Change Agents receive a separate survey with questions directly pertaining to relationships with the change network). The first survey is sent at six weeks prior to implementation, followed by a second survey two weeks before rollout. The four-week interval allows time for adjustments to change management strategies and/or modifications to communications and training plans. The outcome of this survey provides input into the “Go/NoGo” decision process prior to implementation. In addition to the survey, Change Management also relies on the change network and existing communication strategies to assess client readiness.

The structure of the survey is broken into four quadrants. They are navigation, leadership, enablement, and ownership. Within each of these quadrants questions were developed to address specific areas. These are outlined in the figure below.



Proprietary and confidential to BGE and Accenture

There are four guiding principles that are followed to ensure the full benefits of the Change Readiness Assessment are maximized. They are: (1) the survey is to be valid and reliable; (2) management is to be involved in strategies to minimize barriers to change; (3) feedback and endorsement from stakeholders is sought; (4) survey format, approach and rollout will be reviewed periodically to ensure it corresponds to the needs of the project.

### Communication

Communications came in several formats. Each communications follows these standards.

1. Designated Communication Flow - communications distributed through established channels to build understanding at each level and insure effective communication.
2. Established & Consistent Vehicles of Communication - Communications will be sent out to all impacted personnel, via the Change Network, through selected delivery vehicles.
3. Standard Number and Distribution of Communications / Contacts - Communications will be sent at standard points over the life of the project.

There are two main communication channels used throughout the project. The first is the monthly "Direct Report" meeting. This meeting targets mid level leaders to keep them abreast of the project status and impacts to their organizations. Over time, this meeting migrated to hands on meeting with lower level leaders. Demos are often the center of the meeting agenda once software became available for this purpose. While this is a good and natural migration of the meeting, adjustments need to be made to keep the mid level leaders informed and engaged.

The second channel is the "Communications Central" electronic newsletter. This communications comes out almost every month and is the main vehicle of communications from the project team to the front line employee. It has links to the various topics so that the reader can go directly to an article that they have an interest in. The main goal is to get folks updated without losing them.

### Training and Performance Support Approach

Part of the new Change Management strategy is to look at the training differently. Lessons learned from prior rollouts show that classroom training is not sufficient, and the project team does not have the resources for labor intensive post-production support. The new approach includes Understanding Functionality, Job Impact Analysis, Training and Performance Support and Go-Live Support, all outlined below.

#### *Understand Functionality*

This task is performed in conjunction with the activity of defining the functional and business requirements (FR). The Change Management FR owner works with both the client and the System Development team to define the current "as-is" and the "to-be" processes. Joint Application Development (JAD) sessions bring all parties together, from end-user to developer, so that all parties are on the same page. The FR owner also participates in the review process for the rest of the System Development activities.

#### *Job Impact Analysis*

This step is to understand how each job is impacted by the new functionality. Next is to ensure that any gaps are filled through the training and performance support materials and/or working with management or human resources to bring awareness of any required job classification/staffing requirements.

### *Training and Performance Support*

The training approach for the Atlas project has both a classroom “training” component for initial education about an application and a “performance support” piece for post-training practice and review. Prior to attending an application specific training, students will attend Atlas Smallworld Level One Foundation training to learn the basic system functionality and navigation.

The training classes are job-specific (i.e. personnel of a single job-type will attend class together where possible), as job-specific changes/impacts are be highlighted. System training is developed per function (i.e. Create Gas Design) and is in the participant's training manual.

The Performance Support portion of the curriculum is designed as a practice lab. In most cases, this practice time is built into the training classroom time. The student is given designed exercises/scenarios to work through while in the Lab. These exercises simulate their real-job experiences and activities they are to perform in the system upon implementation. In the case of Job Design, the most complex application, the student’s curriculum has lab time as well as assigned exercises to take back and practice at their home location in between classes.

A certification process is in place for the Job Design application. This ensures students receive and retain training by incorporating take-home exercises between classes. It requires students to attend all training courses AND successfully complete a targeted amount of assignments.

### *Go Live Support*

Upon implementation, an Atlas Change Management representative is available on-site with the impacted business units to provide Day 1 support and perform an Implementation Assessment. The purpose of Go-Live Support is to be on-site at implementation, ensure that the users are using the system and to evaluate that the unit is able to successfully conduct their business activities in the new system. The Change Management representative evaluates the Change Effectiveness and analyzes if there are any performance concerns that need follow-up. The Atlas Production Support team is available for support for any system problems/errors, etc. and provides support through the Atlas Help Desk.

## LESSONS LEARNED

As in any project, there are many lessons to be learned. Atlas is no different. Below is a summary of the lessons learned from a project perspective as well as from a client perspective. Both provide key learnings for you to incorporate as you move forward to implementing GIS technologies in your organization.

### Project Perspective

#### *Project Team Structure*

The relationship between the System Development Team (business/functional team) and the Change Management Team must be very integrated. The change management team spent a lot of time working with the system development team on redundant tasks. There could have been better definition of responsibilities and handoffs. As a result, the change management team spent a lot more time on tasks in understanding functionality and developing the training material than originally estimated or even needed.

Estimating time and staffing for projects is a major hurdle to overcome. We spent a lot more time on tasks as a project than originally estimated. And we were committed to delivering a quality product. This

meant many long weeks, month after month to keep up with the deliverables. The change management team and production support teams were staffed the lightest. The team was made up of a lead and 2.5 analyst. That equates to almost 9% of the project team, not nearly big enough for an effort of this magnitude. As applications rolled out, this became increasingly difficult to manage.

Part of the Change Management strategy noted previously, builds time to assess client use of new applications. However, there is not enough time built in for contingencies, address re-training needs or schedule slippage. There is a definite need to keep the project ball moving forward, but there is also a need for staffing to accommodate a post-rollout support designed to work with the clients to make the best-use of the new system. Do not under estimate the needed resources for both of these functions. The client pays for shortages in these areas and ultimately the project fails to meet the business case timeline.

The project team was comprised of fulltime team members that may or may not have had business expertise in a particular area. Another, perhaps more effective approach may have been to introduce business experts onto the team when working on business requirements that needed their level of expertise and then once completed, send them back to their organization. We spent a lot of time gathering business requirements and learning their business that could have been better spent.

### *Client Support*

Success in implementing GIS technologies is heavily dependent on client support. As noted throughout this paper, getting and keeping the client engaged is key to success. It required the use of Subject Matter Experts (SME's). SME's were used in varying capacities throughout the course of the project. Near the end, it was realized that the best agent of change and communication we had were the SME's that were immersed, into the project team for extended periods of time. SME's were able to answer business process questions while providing input and feedback into both the test plan and the training curriculum. This involvement, while extremely beneficial to the project team, and ultimately the client organizations, was not without costs to the client -- only the larger clients were able to give up one of their most productive workers for a block of time. Since, as detailed below under Client Perspective, the operating organizations had a business to run and commitments to keep.

One of the important benefits of keeping the clients engaged is that both parties will be aware of what is going on and therefore be better prepared to address ongoing changes to client organizations and understanding potential impacts to the project.

### Client Perspective

#### *Running the business*

One of the major risks associated with implementing GIS technologies is the need to keep the business running and productivity as high as possible while the employees work through the training curriculum and learning curve. One of the major frustrations of our clients was their need to know specifics on how the implementation would affect their business *i.e.* how and when they could start realizing the benefits outlined in the business case. While most clients understood the cost of classroom time and the inevitable learning curve, they wanted numbers. Some supervisors needed information to budget and plan for staffing, while others had customers wanting service and they needed a plan for how to get it to them. And we, as a project, could not provide answers for them in a timely enough fashion to meet their needs.

In the end, organizations, and change agents that were more heavily engaged with the project team were better prepared for the impacts to their organizations. They took ownership to get the numbers by attending SME sessions, constantly asking questions and then applying their business knowledge to get to the answers they needed to prepare.

### *Understanding the technology*

The project team was forced to build functionality to static business processes or, more accurately, a snapshot of a business process. In reality, the business processes were under intense scrutiny and were more dynamic than anticipated. As clients updated their business processes, they needed help from the project team to guide them with how the new technology would affect some of their decisions and initiatives. In some cases, clients failed to realize some decisions they were making could be impacted by the project. This put an even further drain on project resources, BUT was very important for us to be engaged in.

### SUMMARY

The topic of this paper is not new. Nor has it been overlooked in writings and presentations over the years. However, one needs to stop and ask, "Why are we still struggling with getting users involved, engaged and part of the process of implementing GIS technologies? The process used at BGE is not rocket science - it is common sense. It is how the process is applied, how committed senior leaders are, how willing the project team is to engage the client throughout the process that hold the answers.

It takes time, often painful time, to engage users in the process. It requires skills that, not to offend anyone, are not high in the IT sector. Engaging the users via the Change Management processes outlined in this paper have been by far the most successful efforts to date of a project of this magnitude at BGE. Involving the users from the beginning has been key to our success. Educating them throughout the process, while time consuming, went a long way in gaining their commitment. We also had Senior Leadership in the company that believed in the value of Change Management and supported our efforts.